



Development of Novel RTP-like Processing for Solar Cell Fabrication using UV-Rich Light Sources

Cooperative Research and Development Final Report

CRADA Number: CRD-11-442

NREL Technical Contact: Bhushan Sopori

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In accordance with Requirements set forth in Article XI.A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

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CRADA Title: Development of Novel RTP-like Processing for Solar Cell Fabrication using UV-rich Light Sources

Parties to the Agreement: Mattson Technology

Joint Work Statement Funding Table showing DOE commitment:

Estimated Costs	NREL Shared Resources
Year 1	\$ 25,000.00
Year 2	\$ 00.00
Year 3	\$ 00.00
TOTALS	\$ 25,000.00

Abstract of CRADA work:

NREL and Mattson Technology are interested in developing new processing techniques for fabrication of solar cells using UV-rich optical processing. UV light has a very high absorption coefficient in most semiconductors, allowing the semiconductor surface to be heated locally and, in some cases, without a significant increase in the substrate temperature. NREL has several projects related to cell processing that currently use an optical furnace (having a spectrum rich in visible and infrared light). Mattson Technology has developed a UV rich light source that can be used in either pulse or continuous modes. The objective of this CRADA is to explore applications in solar cell processing where absorption characteristics of UV light can lead to lower cell cost and/or higher efficiencies.

Summary of Research Results:

Two sets of samples were prepared to form N/P junctions. Initial tests were performed using an NREL optical furnace. The junction quality was very good.

Subject Inventions Listing: None

Report Date: 11/13/12 **Responsible Technical Contact at Alliance/NREL:** Bhushan Sopori

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